



74

# SEQUENCE LISTING

<10> Freckling, Terry M.  
<11> Ignatyev, George M.

<120> COMPOSITIONS AND METHODS FOR TREATING HEMORRHAGIC VIRUS  
INFECTIONS AND OTHER DISORDERS

<130> 24881-301D

<140> US/10/038,557

<141> 2002-01-03

<150> 09/840,707

<151> 2001-04-23

<150> 09/562,979

<151> 2000-04-27

<150> 60/198,210

<151> 1999-04-27

<160> 26

<170> PatentIn Ver. 2.0

<210> 1

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<212> PRT

<213> Homo sapiens

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<223> Recombinant Interleukin 1-alpha

<300>

<308> AAA59134/GenBank

<309> 1994-12-13

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Lys Ser Phe Tyr His Val Ser Tyr Gly Pro Leu His Glu Gly Cys Met  
35 40 45  
Asp Gln Ser Val Ser Leu Ser Ile Ser Glu Thr Ser Lys Thr Ser Lys  
50 55 60  
Leu Thr Phe Lys Glu Ser Met Val Val Val Ala Thr Asn Gly Lys Val  
65 70 75 80  
Leu Lys Lys Arg Arg Leu Ser Leu Ser Gln Ser Ile Thr Asp Asp Asp  
85 90 95  
Leu Glu Ala Ile Ala Asn Asp Ser Glu Glu Glu Ile Ile Lys Pro Arg  
100 105 110  
Ser Ala Pro Phe Ser Phe Leu Ser Asn Val Lys Tyr Asn Phe Met Arg  
115 120 125  
Ile Ile Lys Tyr Glu Phe Ile Leu Asn Asp Ala Leu Asn Gln Ser Ile  
130 135 140  
Ile Arg Ala Asn Asp Gln Tyr Leu Thr Ala Ala Ala Leu His Asn Leu

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				165					170					175	
Asp	Ala	Lys	Ile	Thr	Val	Ile	Leu	Arg	Ile	Ser	Lys	Thr	Gln	Leu	Tyr
			180					185					190		
Val	Thr	Ala	Gln	Asp	Glu	Asp	Gln	Pro	Val	Leu	Leu	Lys	Glu	Met	Pro
		195					200					205			
Glu	Ile	Pro	Lys	Thr	Ile	Thr	Gly	Ser	Glu	Thr	Asn	Leu	Leu	Phe	Phe
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Trp	Glu	Thr	His	Gly	Thr	Lys	Asn	Tyr	Phe	Thr	Ser	Val	Ala	His	Pro
225					230					235					240
Asn	Leu	Phe	Ile	Ala	Thr	Lys	Gln	Asp	Tyr	Trp	Val	Cys	Leu	Ala	Gly
				245					250					255	
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<220>  
 <223> Interleukin-1 beta (catabolin)

<300>  
 <308> P01584/Genbank  
 <309> 1986-07-21

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			20					25					30		
Lys	Cys	Ser	Phe	Gln	Asp	Leu	Asp	Leu	Cys	Pro	Leu	Asp	Gly	Gly	Ile
		35					40					45			
Gln	Leu	Arg	Ile	Ser	Asp	His	His	Tyr	Ser	Lys	Gly	Phe	Arg	Gln	Ala
		50				55					60				
Ala	Ser	Val	Val	Val	Ala	Met	Asp	Lys	Leu	Arg	Lys	Met	Leu	Val	Pro
	65				70					75					80
Cys	Pro	Gln	Thr	Phe	Gln	Glu	Asn	Asp	Leu	Ser	Thr	Phe	Phe	Pro	Phe
				85					90					95	
Ile	Phe	Glu	Glu	Glu	Pro	Ile	Phe	Phe	Asp	Thr	Trp	Asp	Asn	Glu	Ala
			100					105					110		
Tyr	Val	His	Asp	Ala	Pro	Val	Arg	Ser	Leu	Asn	Cys	Thr	Leu	Arg	Asp
		115					120					125			
Ser	Gln	Gln	Lys	Ser	Leu	Val	Met	Ser	Gly	Pro	Tyr	Glu	Leu	Lys	Ala
	130					135					140				
Leu	His	Leu	Gln	Gly	Gln	Asp	Met	Glu	Gln	Gln	Val	Val	Phe	Ser	Met

145					150						155				160
Ser	Phe	Val	Gln	Gly	Glu	Glu	Ser	Asn	Asp	Lys	Ile	Pro	Val	Ala	Leu
				165					170					175	
Gly	Leu	Lys	Glu	Lys	Asn	Leu	Tyr	Leu	Ser	Cys	Val	Leu	Lys	Asp	Asp
			180					185					190		
Lys	Pro	Thr	Leu	Gln	Leu	Glu	Ser	Val	Asp	Pro	Lys	Asn	Tyr	Pro	Lys
		195					200					205			
Lys	Lys	Met	Glu	Lys	Arg	Phe	Val	Phe	Asn	Lys	Ile	Glu	Ile	Asn	Asn
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Lys	Leu	Glu	Phe	Glu	Ser	Ala	Gln	Phe	Pro	Asn	Trp	Tyr	Ile	Ser	Thr
225					230					235					240
Ser	Gln	Ala	Glu	Asn	Met	Pro	Val	Phe	Leu	Gly	Gly	Thr	Lys	Gly	Gly
				245					250					255	
Gln	Asp	Ile	Thr	Asp	Phe	Thr	Met	Gln	Phe	Val	Ser	Ser			
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 <213> Homo sapiens

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<300>  
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 <309> 1990-04-01

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Ser	Leu	Glu	Ala	Asp	Lys	Cys	Lys	Glu	Arg	Glu	Glu	Lys	Ile	Ile	Leu
			20					25					30		
Val	Ser	Ser	Ala	Asn	Glu	Ile	Asp	Val	Arg	Pro	Cys	Pro	Leu	Asn	Pro
		35					40					45			
Asn	Glu	His	Lys	Gly	Thr	Ile	Thr	Trp	Tyr	Lys	Asp	Asp	Ser	Lys	Thr
	50					55					60				
Pro	Val	Ser	Thr	Glu	Gln	Ala	Ser	Arg	Ile	His	Gln	His	Lys	Glu	Lys
65					70					75					80
Leu	Trp	Phe	Val	Pro	Ala	Lys	Val	Glu	Asp	Ser	Gly	His	Tyr	Tyr	Cys
				85					90					95	
Val	Val	Arg	Asn	Ser	Ser	Tyr	Cys	Leu	Arg	Ile	Lys	Ile	Ser	Ala	Lys
			100					105					110		
Phe	Val	Glu	Asn	Glu	Pro	Asn	Leu	Cys	Tyr	Asn	Ala	Gln	Ala	Ile	Phe
		115					120					125			
Lys	Gln	Lys	Leu	Pro	Val	Ala	Gly	Asp	Gly	Gly	Leu	Val	Cys	Pro	Tyr
	130					135					140				
Met	Glu	Phe	Phe	Lys	Asn	Glu	Asn	Asn	Glu	Leu	Pro	Lys	Leu	Gln	Trp

145					150					155					160
Tyr	Lys	Asp	Cys	Lys 165	Pro	Leu	Leu	Leu	Asp 170	Asn	Ile	His	Phe	Ser 175	Gly
Val	Lys	Asp	Arg 180	Leu	Ile	Val	Met	Asn 185	Val	Ala	Glu	Lys	His 190	Arg	Gly
Asn	Tyr	Thr 195	Cys	His	Ala	Ser	Tyr 200	Thr	Tyr	Leu	Gly	Lys 205	Gln	Tyr	Pro
Ile	Thr 210	Arg	Val	Ile	Glu	Phe 215	Ile	Thr	Leu	Glu	Glu 220	Asn	Lys	Pro	Thr
Arg 225	Pro	Val	Ile	Val	Ser 230	Pro	Ala	Asn	Glu	Thr 235	Met	Glu	Val	Asp	Leu 240
Gly	Ser	Gln	Ile	Gln 245	Leu	Ile	Cys	Asn 250	Val	Thr	Gly	Gln	Leu	Ser 255	Asp
Ile	Ala	Tyr	Trp 260	Lys	Trp	Asn	Gly	Ser 265	Val	Ile	Asp	Glu	Asp 270	Asp	Pro
Val	Leu	Gly 275	Glu	Asp	Tyr	Tyr	Ser 280	Val	Glu	Asn	Pro	Ala 285	Asn	Lys	Arg
Arg	Ser 290	Thr	Leu	Ile	Thr	Val 295	Leu	Asn	Ile	Ser	Glu 300	Ile	Glu	Ser	Arg
Phe 305	Tyr	Lys	His	Pro	Phe 310	Thr	Cys	Phe	Ala	Lys 315	Asn	Thr	His	Gly	Ile 320
Asp	Ala	Ala	Tyr	Ile 325	Gln	Leu	Ile	Tyr	Pro 330	Val	Thr	Asn	Phe	Gln 335	Lys
His	Met	Ile	Gly 340	Ile	Cys	Val	Thr	Leu 345	Thr	Val	Ile	Ile	Val 350	Cys	Ser
Val	Phe	Ile 355	Tyr	Lys	Ile	Phe	Lys 360	Ile	Asp	Ile	Val	Leu 365	Trp	Tyr	Arg
Asp	Ser 370	Cys	Tyr	Asp	Phe	Leu 375	Pro	Ile	Lys	Ala	Ser 380	Asp	Gly	Lys	Thr
Tyr 385	Asp	Ala	Tyr	Ile	Leu 390	Tyr	Pro	Lys	Thr	Val 395	Gly	Glu	Gly	Ser	Thr 400
Ser	Asp	Cys	Asp	Ile 405	Phe	Val	Phe	Lys 410	Val	Leu	Pro	Glu	Val	Leu 415	Glu
Lys	Gln	Cys	Gly 420	Tyr	Lys	Leu	Phe	Ile 425	Tyr	Gly	Arg	Asp	Asp 430	Tyr	Val
Gly	Glu	Asp 435	Ile	Val	Glu	Val	Ile 440	Asn	Glu	Asn	Val	Lys 445	Lys	Ser	Arg
Arg	Leu 450	Ile	Ile	Ile	Leu	Val 455	Arg	Glu	Thr	Ser	Gly 460	Phe	Ser	Trp	Leu
Gly 465	Gly	Ser	Ser	Glu	Glu 470	Gln	Ile	Ala	Met	Tyr 475	Asn	Ala	Leu	Val	Gln 480
Asp	Gly	Ile	Lys	Val 485	Val	Leu	Leu	Glu	Leu 490	Glu	Lys	Ile	Gln	Asp 495	Tyr
Glu	Lys	Met	Pro	Glu	Ser	Ile	Lys	Phe	Ile	Lys	Gln	Lys	His	Gly	Ala

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Arg	Phe	Trp	Lys	Asn	Val	Arg	Tyr	His	Met	Pro	Val	Gln	Arg	Arg	Ser
		530					535					540			
Pro	Ser	Ser	Lys	His	Gln	Leu	Leu	Ser	Pro	Ala	Thr	Lys	Glu	Lys	Leu
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Gln	Arg	Glu	Ala	His	Val	Pro	Leu	Gly							
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 <309> 1993-08-01  
  
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			20					25					30		
Arg	His	Tyr	Lys	Arg	Glu	Phe	Arg	Leu	Glu	Gly	Glu	Pro	Val	Ala	Leu
		35					40					45			
Arg	Cys	Pro	Gln	Val	Pro	Tyr	Trp	Leu	Trp	Ala	Ser	Val	Ser	Pro	Arg
	50					55					60				
Ile	Asn	Leu	Thr	Trp	His	Lys	Asn	Asp	Ser	Ala	Arg	Thr	Val	Pro	Gly
	65				70					75					80
Glu	Glu	Glu	Thr	Arg	Met	Trp	Ala	Gln	Asp	Gly	Ala	Leu	Trp	Leu	Leu
				85					90					95	
Pro	Ala	Leu	Gln	Glu	Asp	Ser	Gly	Thr	Tyr	Val	Cys	Thr	Thr	Arg	Asn
			100					105					110		
Ala	Ser	Tyr	Cys	Asp	Lys	Met	Ser	Ile	Glu	Leu	Arg	Val	Phe	Glu	Asn
		115					120					125			
Thr	Asp	Ala	Phe	Leu	Pro	Phe	Ile	Ser	Tyr	Pro	Gln	Ile	Leu	Thr	Leu
	130					135					140				
Ser	Thr	Ser	Gly	Val	Leu	Val	Cys	Pro	Asp	Leu	Ser	Glu	Phe	Thr	Arg
	145				150					155					160
Asp	Lys	Thr	Asp	Val	Lys	Ile	Gln	Trp	Tyr	Lys	Asp	Ser	Leu	Leu	Leu
			165						170					175	
Asp	Lys	Asp	Asn	Glu	Lys	Phe	Leu	Ser	Val	Arg	Gly	Thr	Thr	His	Leu
			180					185					190		
Leu	Val	His	Asp	Val	Ala	Leu	Glu	Asp	Ala	Gly	Tyr	Tyr	Arg	Cys	Val
		195					200					205			
Leu	Thr	Phe	Ala	His	Glu	Gly	Gln	Gln	Tyr	Asn	Ile	Thr	Arg	Ser	Ile

210		215		220
Glu 225	Leu	Arg	Ile	Lys
				Lys 230
				Lys
				Lys
				Glu
				Glu
				Thr 235
				Ile
				Pro
				Val
				Ile
				Ile 240
Ser	Pro	Leu	Lys	Thr 245
				Ile
				Ser
				Ala
				Ser
				Leu 250
				Gly
				Ser
				Arg
				Leu
				Thr 255
Pro	Cys	Lys	Val 260	Phe
				Leu
				Gly
				Thr
				Gly 265
				Thr
				Pro
				Leu
				Thr
				Thr 270
Trp	Trp	Thr 275	Ala	Asn
				Asp
				Thr
				His 280
				Ile
				Glu
				Ser
				Ala
				Tyr 285
				Pro
				Gly
				Gly
Arg	Val 290	Thr	Glu	Gly
				Pro
				Arg
				Gln
				Glu
				Tyr
				Ser
				Glu 300
				Asn
				Asn
				Glu
				Asn
Tyr 305	Ile	Glu	Val	Pro
				Leu 310
				Ile
				Phe
				Asp
				Pro
				Val 315
				Thr
				Arg
				Glu
				Asp
				Leu 320
His	Met	Asp	Phe	Lys 325
				Cys
				Val
				Val
				His
				Asn 330
				Thr
				Leu
				Ser
				Phe
				Gln 335
				Thr
Leu	Arg	Thr	Thr 340	Val
				Lys
				Glu
				Ala
				Ser
				Ser
				Thr
				Phe
				Ser
				Trp 350
				Gly
				Ile
				Trp
Val	Leu	Ala	Pro	Leu
				Ser
				Leu
				Ala
				Phe
				Leu
				Val
				Leu
				Gly 365
				Gly
				Ile
				Trp
Met	His	Arg	Arg	Cys
				Lys
				His
				Arg
				Thr
				Gly
				Lys
				Ala
				Asp
				Gly
				Leu
				Thr
Val 385	Leu	Trp	Pro	His
				His
				Gln
				Asp
				Phe
				Gln
				Ser
				Tyr
				Pro
				Lys

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 <223> Interleukin-1 Receptor Antagonist Protein  
 Precursor (IL-1RA; ICIL-1RA; IRAP)

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 <309> 1990-11-01

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Phe	Leu	Phe	His	Ser	Glu	Thr	Ile	Cys	Arg	Pro	Ser	Gly	Arg	Lys	Ser
			20					25					30		
Ser	Lys	Met	Gln	Ala	Phe	Arg	Ile	Trp	Asp	Val	Asn	Gln	Lys	Thr	Phe
		35					40					45			
Tyr	Leu	Arg	Asn	Asn	Gln	Leu	Val	Ala	Gly	Tyr	Leu	Gln	Gly	Pro	Asn
	50					55					60				
Val	Asn	Leu	Glu	Glu	Lys	Ile	Asp	Val	Val	Pro	Ile	Glu	Pro	His	Ala
	65				70					75					80
Leu	Phe	Leu	Gly	Ile	His	Gly	Gly	Lys	Met	Cys	Leu	Ser	Cys	Val	Lys

				85						90					95
Ser	Gly	Asp	Glu	Thr	Arg	Leu	Gln	Leu	Glu	Ala	Val	Asn	Ile	Thr	Asp
			100					105					110		
Leu	Ser	Glu	Asn	Arg	Lys	Gln	Asp	Lys	Arg	Phe	Ala	Phe	Ile	Arg	Ser
		115					120					125			
Asp	Ser	Gly	Pro	Thr	Thr	Ser	Phe	Glu	Ser	Ala	Ala	Cys	Pro	Gly	Trp
	130					135					140				
Phe	Leu	Cys	Thr	Ala	Met	Glu	Ala	Asp	Gln	Pro	Val	Ser	Leu	Thr	Asn
145					150					155					160
Met	Pro	Asp	Glu	Gly	Val	Met	Val	Thr	Lys	Phe	Tyr	Phe	Gln	Glu	Asp
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Glu

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<220>  
 <223> IL-1 receptor intracellular ligand protein  
 comprising amino acid sequence

<300>  
 <310> 5,817,476  
 <311> 1995-06-07  
 <312> 1998-10-06

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			20					25					30		
Arg	Ser	Leu	Glu	Phe	Ser	Tyr	Gln	Glu	Asp	Lys	Pro	Thr	Lys	Lys	Thr
		35					40					45			
Arg	Pro	Arg	Lys	Ile	Pro	Ser	Val	Gly	Arg	Gln	Gly	Glu	His	Leu	Ser
	50					55					60				
Asn	Ser	Thr	Ser	Ala	Phe	Ser	Thr	Arg	Ser	Asp	Ala	Ser	Gly	Thr	Asn
65					70					75					80
Asp	Phe	Arg	Glu	Phe	Val	Leu	Glu	Met	Gln	Lys	Thr	Ile	Thr	Asp	Leu
				85					90					95	
Arg	Thr	Gln	Ile	Lys	Lys	Leu	Glu	Ser	Arg	Leu	Ser	Thr	Thr	Glu	Cys
			100					105						110	
Val	Asp	Ala	Gly	Gly	Glu	Ser	His	Ala	Asn	Asn	Thr	Lys	Trp	Lys	Lys
		115					120					125			
Asp	Ala	Cys	Thr	Ile	Cys	Glu	Cys	Lys	Asp	Gly	Gln	Val	Thr	Cys	Phe
	130					135					140				
Val	Glu	Ala	Cys	Pro	Pro	Ala	Thr	Cys	Ala	Val	Pro	Val	Asn	Ile	Pro
145					150					155					160
Gly	Ala	Cys	Cys	Pro	Val	Cys	Leu	Gln	Lys	Arg	Ala	Glu	Glu	Lys	Pro

165

170

175

&lt;210&gt; 7

&lt;211&gt; 320

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

<223> IL-1 receptor intracellular ligand protein  
comprising amino acid sequence

&lt;300&gt;

&lt;310&gt; 5,817,476

&lt;311&gt; 1995-06-07

&lt;312&gt; 1998-10-06

&lt;400&gt; 7

Lys Lys Gly Gly Lys Thr Glu Gln Asp Gly Tyr Gln Lys Pro Thr Asn  
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20 25 30Ser Phe Glu Gly Lys Arg Arg Leu Leu Leu Ile Thr Ala Pro Lys Ala  
35 40 45Glu Asn Asn Met Tyr Val Gln Gln Arg Asp Glu Tyr Leu Glu Ser Phe  
50 55 60Cys Lys Met Ala Thr Arg Lys Ile Ser Val Ile Thr Ile Phe Gly Pro  
65 70 75 80Val Asn Asn Ser Thr Met Lys Ile Asp His Phe Gln Leu Asp Asn Glu  
85 90 95Lys Pro Met Arg Val Val Asp Asp Glu Asp Leu Val Asp Gln Arg Leu  
100 105 110Ile Ser Glu Leu Arg Lys Glu Tyr Gly Met Thr Tyr Asn Asp Phe Phe  
115 120 125Met Val Leu Thr Asp Val Asp Leu Arg Val Lys Gln Tyr Tyr Glu Val  
130 135 140Pro Ile Thr Met Lys Ser Val Phe Asp Leu Ile Asp Thr Phe Gln Ser  
145 150 155 160Arg Ile Lys Asp Met Glu Lys Gln Lys Lys Glu Gly Ile Val Cys Lys  
165 170 175Glu Glu Val Gly Gly Val Leu Glu Leu Phe Pro Ile Asn Gly Ser Ser  
180 185 190Val Val Glu Arg Glu Asp Val Pro Ala His Leu Val Lys Asp Ile Arg  
195 200 205Asn Tyr Phe Gln Val Ser Pro Glu Tyr Phe Ser Met Leu Leu Val Gly  
210 215 220Lys Asp Gly Asn Val Lys Ser Trp Tyr Pro Ser Pro Met Trp Ser Met  
225 230 235 240Val Ile Val Tyr Asp Leu Ile Asp Ser Met Gln Leu Arg Arg Gln Glu  
245 250 255

Met Ala Ile Gln Gln Ser Leu Gly Met Arg Cys Gln Lys Met Ser Met



	260		265		270										
Gln	Ala	Met	Val	Thr	Ile	Val	Thr	Thr	Lys	Asp	Thr	Arg	Met	Val	Thr
	275						280					285			
Arg	Met	Thr	Thr	Val	Ile	Met	Arg	Val	Ile	Thr	Met	Asp	Thr	Leu	Thr
	290					295					300				
Glu	Gln	Lys	Tyr	Val	Thr	Leu	Asp	Ser	Ala	Ser	Phe	Leu	Cys	Ser	Cys
305					310					315					320

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<220>  
 <223> IL-1 receptor intracellular ligand protein  
 comprising amino acid sequence

<300>  
 <310> 5,817,476  
 <311> 1995-06-07  
 <312> 1998-10-06

Lys	Asn	Phe	Phe	Leu	Thr	Asn	Arg	Ala	Arg	Glu	Arg	Ser	Asp	Thr	Phe
1				5					10					15	
Ile	Asn	Leu	Arg	Glu	Val	Leu	Asn	Arg	Phe	Lys	Leu	Pro	Pro	Gly	Glu
			20					25					30		
Tyr	Ile	Leu	Val	Pro	Ser	Thr	Phe	Glu	Pro	Asn	Lys	Asp	Gly	Asp	Phe
		35					40					45			
Cys	Ile	Arg	Val	Phe	Ser	Glu	Lys	Lys	Ala	Asp	Tyr	Gln	Ala	Val	Asp
	50					55					60				
Asp	Glu	Ile	Glu	Ala	Asn	Leu	Glu	Glu	Phe	Asp	Ile	Ser	Glu	Asp	Asp
65					70					75					80
Ile	Asp	Asp	Gly	Phe	Arg	Arg	Leu	Phe	Ala	Gln	Leu	Ala	Gly	Glu	Asp
				85					90					95	
Ala	Glu	Ile	Ser	Ala	Phe	Glu	Leu	Gln	Thr	Ile	Leu	Arg	Arg	Val	Leu
			100					105					110		
Ala	Lys	Arg	Gln	Asp	Ile	Lys	Ser	Asp	Gly	Phe	Ser	Ile	Glu	Thr	Cys
		115					120					125			
Lys	Ile	Met	Val	Asp	Met	Leu	Asp	Ser	Asp	Gly	Ser	Gly	Lys	Leu	Gly
	130					135					140				
Leu	Lys	Glu	Phe	Tyr	Ile	Leu	Trp	Thr	Lys	Ile	Gln	Lys	Tyr	Gln	Lys
145					150					155					160
Ile	Tyr	Arg	Glu	Ile	Asp	Val	Asp	Arg	Ser	Gly	Thr	Met	Asn	Ser	Tyr
				165					170					175	
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Lys Ile Phe Lys Gln Leu Asp Pro Glu Asn Thr Gly Thr Ile Glu Leu				
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Pro Tyr Ser Ser Lys Thr Arg Gly Met Arg Trp Lys Arg Pro Thr Glu	
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Ile Cys Gln Gly Ala Leu Gly Asp Cys Trp Leu Leu Ala Ala Ile Ala	
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Ser Leu Thr Leu Asn Glu Glu Ile Leu Ala Arg Val Val Pro Leu Asn	
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Gln Ser Phe Gln Glu Asn Tyr Ala Gly Ile Phe His Phe Gln Phe Trp	
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Gln Tyr Gly Glu Trp Val Glu Val Val Val Asp Asp Arg Leu Pro Thr	
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Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Ile Asn Gly Cys Tyr	
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Glu Ala Leu Ser Gly Gly Ala Thr Thr Glu Gly Phe Glu Asp Phe Thr	
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Gly Gly Ile Ala Glu Trp Tyr Glu Leu Lys Lys Pro Pro Pro Asn Leu	
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Phe Lys Ile Ile Gln Lys Ala Leu Gln Lys Gly Ser Leu Leu Gly Cys	

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Gly	Glu	Val	Glu	Trp	Thr	Gly	Arg	Trp	Asn	Asp	Asn	Cys	Pro	Ser	Trp
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Asp	Gly	Glu	Phe	Trp	Met	Ser	Phe	Ser	Asp	Phe	Leu	Arg	His	Tyr	Ser
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Arg	Leu	Glu	Ile	Cys	Asn	Leu	Thr	Pro	Asp	Thr	Leu	Thr	Ser	Asp	Thr
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Tyr	Lys	Lys	Trp	Lys	Leu	Thr	Lys	Met	Asp	Gly	Asn	Trp	Arg	Arg	Gly
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Gly	Glu	Ser	Gly	Cys	Thr	Phe	Leu	Val	Gly	Leu	Ile	Gln	Lys	His	Arg
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Cys	Lys	Ile	Met	Val	Asp	Met	Leu	Asp	Ser	Asp	Gly	Ser	Gly	Lys	Leu

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Lys	Ile	Tyr	Arg	Glu	Ile	Asp	Val	Asp	Arg	Ser	Gly	Thr	Met	Asn	Ser
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Gln	Leu	His	Gln	Val	Ile	Val	Ala	Arg	Phe	Ala	Asp	Asp	Gln	Leu	Ile
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Phe	Lys	Ile	Phe	Lys	Gln	Leu	Asp	Pro	Glu	Asn	Thr	Gly	Thr	Ile	Glu
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<300>  
 <301> Fujiwara, Toshiyoshi  
 Grimm, Elizabeth A.  
 <302> Specific Inhibition of Interleukin 1 beta Gene  
 Expression by an Antisense Oligonucleotide: Obligatory  
 Role of Interleukin 1 in the Generation of  
 Lymphokine-activated Killer Cells  
 <303> Cancer Res.  
 <304> 52  
 <306> 4954-4959  
 <307> 1992-09-15

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<300>  
 <301> Maier, Jeanette A.  
 Voulalas, Pamela  
 Roeder, David  
 Maclag, Thomas  
 <302> Extension of the Life-Span of Human Endothelial Cells  
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 <303> Science  
 <304> 249

<306> 1570-1574  
<307> 1990-09-28

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24

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receptor

<300>  
<301> Miraglia, Loren  
Geiger, Thomas  
Bennett, C. Frank  
Dean, Nicholas M.  
<302> Inhibition of Interleukin-1 Type I Receptor Expression  
in Human Cell-Lines by an Antisense Phosphorothioate  
Oligodeoxynucleotide  
<303> Int. J. Immunopharmacol.  
<304> 18  
<305> 4  
<306> 227-240  
<307> 1996

<400> 12  
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<210> 13  
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<300>  
<301> Burch, Ronald M.  
Mahan, Lawrence C.  
<302> Oligonucleotides Antisense to the Interleukin Receptor  
I mRNA Block the Effects of Interleukin I in Cultured  
Murine and Human Fibroblasts and in Mice  
<303> J. Clin. Invest.  
<304> 88  
<306> 1190-1196  
<307> 1991

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18

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Arg Asp Leu Ser Leu Ile Ser Pro Leu Ala Gln Ala Val Arg Ser Ser
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Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro
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Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu
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Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser
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Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly
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Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala
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Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro
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Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu
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Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu
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<309> 1989-03-01

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 His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys  
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 50 55 60  
 Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp





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 Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val  
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 Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr  
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 Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly  
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Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser  
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 <311> 1995-06-19  
 <312> 1998-12-15

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Arg	Val	Tyr	Leu	Tyr	Glu	Gly	Leu	Leu	Gly	Lys	Glu	Arg	Ser	Thr	Leu
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Trp	Asp	Gln	Met	Gln	Phe	Trp	Glu	Asp	Ala	Phe	Leu	Asp	Ala	Val	Met
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Leu	Glu	Arg	Glu	Gly	Met	Gly	Met	Asp	Gln	Gly	Pro	Gln	Glu	Met	Ile
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Asp	Arg	Tyr	Leu	Ser	Leu	Gly	Glu	His	Asp	Arg	Lys	Arg	Leu	Glu	Asp
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Asp	Glu	Asp	Arg	Leu	Leu	Ala	Thr	Leu	Leu	His	Asn	Leu	Ile	Ser	Tyr
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Met	Leu	Leu	Met	Lys	Val	Asn	Lys	Asn	Asp	Ile	Arg	Lys	Lys	Val	Arg
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Arg	Leu	Met	Gly	Lys	Ser	His	Ile	Gly	Leu	Val	Tyr	Ser	Gln	Gln	Ile
				165					170					175	
Asn	Glu	Val	Leu	Asp	Gln	Leu	Ala	Asn	Leu	Asn	Gly	Arg	Asp	Leu	Ser
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Asp	Asp	Cys	Val	Val	Leu	Arg	Ser	Asn	Ile	Gly	Thr	Val	Tyr	Glu	Arg
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Trp	Trp	Tyr	Glu	Lys	Leu	Ile	Asn	Met	Thr	Tyr	Cys	Pro	Lys	Thr	Lys
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Val	Leu	Cys	Leu	Trp	Arg	Arg	Asn	Gly	Ser	Glu	Thr	Gln	Leu	Asn	Lys
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Phe	Tyr	Thr	Lys	Lys	Cys	Arg	Glu	Leu	Tyr	Tyr	Cys	Val	Lys	Asp	Ser
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Ser	His	Lys	Tyr	Lys	Thr	Pro	Met	Ala	His	Glu	Ile	Cys	Tyr	Ser	Val

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Glu	Val	Leu	Ser	Glu	Cys	Arg	Leu	Leu	Ala	Tyr	Ile	Ser	Gln	Val	Pro	
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Thr	Gln	Met	Ser	Phe	Leu	Phe	Arg	Leu	Ile	Asn	Ile	Ile	His	Val	Gln	
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Thr	Leu	Thr	Gln	Glu	Asn	Val	Ser	Cys	Leu	Asn	Thr	Ser	Leu	Val	Ile	
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225					230					235					240	
Asn	Phe	His	Asn	Leu	Leu	Arg	Phe	Trp	Gln	Gln	His	Tyr	Leu	His	Lys	
				245					250					255		
Asp	Lys	Asp	Ser	Thr	Cys	Leu	Glu	Asn	Ser	Ser	Cys	Ile	Ser	Phe	Ser	
			260					265					270			
Tyr	Trp	Lys	Glu	Thr	Val	Ser	Ile	Leu	Leu	Asn	Pro	Asp	Arg	Gln	Ser	
		275					280					285				
Pro	Ser	Ala	Leu	Val	Ser	Tyr	Ile	Glu	Glu	Pro	Tyr	Met	Asp	Ile	Asp	
	290					295					300					
Arg	Asp	Phe	Thr	Glu	Glu											
305					310											

<210> 21  
 <211> 607  
 <212> PRT  
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 <223> TNF receptor death domain ligand protein  
 comprising amino acid sequence

<300>  
 <310> 5,849,501  
 <311> 1995-06-19  
 <312> 1998-12-15

<400> 21  
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 Thr Val Leu Ser Leu Glu Gln Ser Tyr Ala His Ala Gly Leu Gly Gly  
                   20                  25                  30  
 Met Ala Ser Ile Phe Gly Leu Leu Glu Ile Ala Gln Thr His Tyr Tyr  
           35                  40                  45  
 Ser Lys Glu Pro Asp Lys Arg Lys Arg Ser Pro Thr Glu Ser Val Asn  
       50                  55                  60  
 Thr Pro Val Gly Lys Asp Pro Gly Leu Ala Gly Arg Gly Asp Pro Lys  
   65                  70                  75                  80  
 Ala Met Ala Gln Leu Arg Val Pro Gln Leu Gly Pro Arg Ala Pro Ser  
                   85                  90                  95  
 Ala Thr Gly Lys Gly Pro Lys Glu Leu Asp Thr Arg Ser Leu Lys Glu  
           100                  105                  110  
 Glu Asn Phe Ile Ala Ser Ile Gly Pro Glu Val Ile Lys Pro Val Phe  
       115                  120                  125  
 Asp Leu Gly Glu Thr Glu Glu Lys Lys Ser Gln Ile Ser Ala Asp Ser  
   130                  135                  140  
 Gly Val Ser Leu Thr Ser Ser Ser Gln Arg Thr Asp Gln Asp Ser Val  
  145                  150                  155                  160  
 Ile Gly Val Ser Pro Ala Val Met Ile Arg Ser Ser Ser Gln Asp Ser  
           165                  170                  175  
 Glu Val Ser Thr Val Val Ser Asn Ser Ser Gly Glu Thr Leu Gly Ala  
           180                  185                  190  
 Asp Ser Asp Leu Ser Ser Asn Ala Gly Asp Gly Pro Gly Gly Glu Gly  
       195                  200                  205  
 Ser Val His Leu Ala Ser Ser Arg Gly Thr Leu Ser Asp Ser Glu Ile  
   210                  215                  220  
 Glu Thr Asn Ser Ala Thr Ser Thr Ile Phe Gly Lys Ala His Ser Leu  
  225                  230                  235                  240  
 Lys Pro Ser Ile Lys Glu Lys Leu Ala Gly Ser Pro Ile Arg Thr Ser  
           245                  250                  255  
 Glu Asp Val Ser Gln Arg Val Tyr Leu Tyr Glu Gly Leu Leu Gly Lys  
       260                  265                  270  
 Glu Arg Ser Thr Leu Trp Asp Gln Met Gln Phe Trp Glu Asp Ala Phe

275					280					285					
Leu	Asp	Ala	Val	Met	Leu	Glu	Arg	Glu	Gly	Met	Gly	Met	Asp	Gln	Gly
	290					295					300				
Pro	Gln	Glu	Met	Ile	Asp	Arg	Tyr	Leu	Ser	Leu	Gly	Glu	His	Asp	Arg
	305					310					315				320
Lys	Arg	Leu	Glu	Asp	Asp	Glu	Asp	Arg	Leu	Leu	Ala	Thr	Leu	Leu	His
				325					330					335	
Asn	Leu	Ile	Ser	Tyr	Met	Leu	Leu	Met	Lys	Val	Asn	Lys	Asn	Asp	Ile
			340					345					350		
Arg	Lys	Lys	Val	Arg	Arg	Leu	Met	Gly	Lys	Ser	His	Ile	Gly	Leu	Val
		355					360					365			
Tyr	Ser	Gln	Gln	Ile	Asn	Glu	Val	Leu	Asp	Gln	Leu	Ala	Asn	Leu	Asn
	370					375					380				
Gly	Arg	Asp	Leu	Ser	Ile	Trp	Ser	Ser	Gly	Ser	Arg	His	Met	Lys	Lys
	385					390					395				400
Gln	Thr	Phe	Val	Val	His	Ala	Gly	Thr	Asp	Thr	Asn	Gly	Asp	Ile	Phe
				405					410					415	
Phe	Met	Glu	Val	Cys	Asp	Asp	Cys	Val	Val	Leu	Arg	Ser	Asn	Ile	Gly
			420					425					430		
Thr	Val	Tyr	Glu	Arg	Trp	Trp	Tyr	Glu	Lys	Leu	Ile	Asn	Met	Thr	Tyr
		435					440					445			
Cys	Pro	Lys	Thr	Lys	Val	Leu	Cys	Leu	Trp	Arg	Arg	Asn	Gly	Ser	Glu
	450					455					460				
Thr	Gln	Leu	Asn	Lys	Phe	Tyr	Thr	Lys	Lys	Cys	Arg	Glu	Leu	Tyr	Tyr
	465					470					475				480
Cys	Val	Lys	Asp	Ser	Met	Glu	Arg	Ala	Ala	Ala	Arg	Gln	Gln	Ser	Ile
				485					490					495	
Lys	Pro	Gly	Pro	Glu	Leu	Gly	Gly	Glu	Phe	Pro	Val	Gln	Asp	Leu	Lys
			500					505					510		
Thr	Gly	Glu	Gly	Gly	Leu	Leu	Gln	Val	Thr	Leu	Glu	Gly	Ile	Asn	Leu
		515					520					525			
Lys	Phe	Met	His	Asn	Gln	Val	Phe	Ile	Glu	Leu	Asn	His	Ile	Lys	Lys
	530					535					540				
Cys	Asn	Thr	Val	Arg	Gly	Val	Phe	Val	Leu	Glu	Glu	Phe	Val	Pro	Glu
	545					550					555				560
Ile	Lys	Glu	Val	Val	Ser	His	Lys	Tyr	Lys	Thr	Pro	Met	Ala	His	Glu
				565					570					575	
Ile	Cys	Tyr	Ser	Val	Leu	Cys	Leu	Phe	Ser	Tyr	Val	Ala	Ala	Val	His
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 <312> 1998-01-06

<400> 22  
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<210> 23  
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 upper primer for Dengue virus type 2 detection

<400> 23  
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<210> 24  
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<400> 24  
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<210> 25  
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 upper primer for IL-1ra detection

<400> 25  
 cgggatccgg gagaaaatcc agcaagatg 29

<210> 26  
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 <212> DNA  
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<400> 26  
 aggtcctgct catcccctta aggc 24